UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/573,190	01/11/2007	Wolfgang Tzschoppe	OC027USU	4869

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ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/573,190	TZSCHOPPE ET AL.
	Examiner	**Art Unit**	
	HEE-YONG KIM	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>22 March 2006</u>.
2a)☐ This action is **FINAL**.　　　　2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>15-28</u> is/are pending in the application.
　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) <u>15-28</u> is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on <u>22 March 2006</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.
　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
　　a)☒ All　b)☐ Some * c)☐ None of:
　　　　1.☒ Certified copies of the priority documents have been received.
　　　　2.☐ Certified copies of the priority documents have been received in Application No. _____.
　　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>3/22/2006</u>.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____ .

DETAILED ACTION

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2.   **Claims 15-16, 18-23, and 25-28** are rejected under 35 U.S.C. 103(a) as being

obvious over Doerfel (US 2003/0,067,539), hereafter referenced as Doerfel in view of

Boerner (DE 3,529,819).

Regarding **claim 15,** Doerfel discloses Method and System for the Three-

Dimensional Representation. Doerfel specifically discloses A method for the spatially

perceptible representation of a scene or a subject to a viewer (Fig.10), in which several

individual picture elements (α_{ij}) are made visible simultaneously in a matrix with j lines

and i columns, comprising:

- displaying α_{ij} picture elements (image elements α_{ij}, paragraph 21) in a matrix,

including partial information from several views (Ak, where k=l.., n) (Views Ak,

paragraph 21) of the scene or the subject;

- interposing a structural plate (filter elements are arranged in front of α_{ij}, paragraph 25)

before the matrix having several optical elements arranged in series to control

propagation directions of light radiated from the α_{ij} picture elements (pre-determining

the propagation direction, paragraph 26) such that the propagation directions

(propagation direction, paragraph 19) within a viewing area, in which the viewer is

located, intersect at a plurality of intersections (intersect in a plurality of intersection

points, paragraph 19), with each intersection corresponding to a viewing position

(corresponds an observation point, paragraph 19);

- whereby from each viewing position the viewer visually perceives with one eye

the partial information of a first selection (one eye perceives predominantly image

elements α_{ij} of first selection, paragraph 20-21) and with the other eye visually

perceives the partial information of a second selection from the Ak views (k=l... n) (the

other eye perceives predominantly image elements α_{ij} of the second selection from

views Ak, paragraph 20-21) .

However, Doerfel fails to disclose wherein an average geometrical distance p between

two adjacent series of light-transmitting optical elements on the structural plate, fulfills

the condition p' ≤ p, in which p=G*sin (0.017°), and where G is about four times a

diagonal length of the α_{ij} picture elements matrix.

Applicant discloses that it was well known in the art that the normally sighted

human eye with visual acuity of S=1, two neighboring points of viewing angle of

approximately less than 1 arc minute (equivalent to approximately 0.017 degree) are no

longer dissolvable (pp.1, line 35 – pp.2, line 1-2). In the analogous filed of endeavor,

Boerner discloses Projection Device for Parallel Panoragram. Specifically, Boerner

discloses that *an average geometrical distance p between two adjacent series of light-*

transmitting optical elements on the structural plate, fulfills the condition p' ≤ p, in which

p=G*sin (0.017°) (for minimum visible angle of one minute of the arc, the pitch distance

<= 0.87 mm for the viewing distance G=3000 mm), in order to remain invisible

(Translation, pp.7, line 13-16). However, Doerfel and Boerner still fail to teach that G is

about four times a diagonal length of the α_{ij} picture elements matrix.

However, it was well known in the art that the optimal viewing distance between

the monitor and the viewer is 2 to 4 times diagonal dimension of the monitor.

Therefore, given this teaching, it would have been obvious to one of ordinary skill

in the art at the time invention was made to modify Doerfel to provide the average pitch

distance between α_{ij} picture elements less than G*sin (0.017°) where G is 4 times

diagonal distance of the monitor, in order to be invisible at the optimum distance (4

times diagonal distance of the monitor). The Doerfel three-dimensional presentation

method, incorporating the Boerner average pitch distance between α_{ij} picture elements

less than G*sin (0.017°) where G is the optimum distance between 2 and 4 times

diagonal distance of the monitor, has all the features of claim 1.

Regarding **claim 16,** The Doerfel three-dimensional presentation method,

incorporating the Boerner average pitch distance between α_{ij} picture elements less

than G*sin (0.017°) where G is the optimum distance between 2 and 4 times diagonal

distance of the monitor, as applied to claim 15, discloses wherein an average

geometrical distance p' between two adjacent series of light-transmitting optical

elements on the structural plate, fulfills the condition p' ≤ p''' ≤ p in which

p'''=H*sin(0.017), and where H is about tow and one-half times a diagonal length of the

α $_{ij}$ picture elements matrix, because H is in the range of the optimum distance

(distance between 2 and 4 times diagonal distance of the monitor).

Regarding **claim 18,** The Doerfel three-dimensional presentation method,

incorporating the Boerner average pitch distance between α $_{ij}$ picture elements less

than G*sin (0.017°) where G is the optimum distance between 2.5 and 4 times diagonal

distance of the monitor, as applied to claim 15, discloses in which the optical elements

comprise a plurality of transparent filter elements (Doerfel: transparency wavelength

filter array, paragraph 35) arranged in a matrix with p columns and q rows (Doerfel:

columns p and lines q, paragraph 34), and the transparent filter elements are

respectively located at least partially between substantially opaque filter elements

(Doerfel: pass light at the predetermined positions, blocked at other positions,

paragraph 35).

Regarding **claim 19,** The Doerfel three-dimensional presentation method,

incorporating the Boerner average pitch distance between α $_{ij}$ picture elements less

than G*sin (0.017°) where G is the optimum distance between 2 and 4 times diagonal

distance of the monitor, as applied to claim 15, discloses in which the partial information

of the first selection from the Ak views (k=l... n), is visually perceived by the viewer with

one eye and the partial information of the second selections from the Ak views (k=l... n) is visually perceived with the other eye and the partial information corresponds to one or several Ak views (k=l... n), whereby the viewer perceives with each eye corresponding inclusive (Doerfel: predominantly, 80% for one eye , but less than 80% for the other eye, paragraph 23) or exclusive partial information associated with the first and second selections.

Regarding **claim 20,** The Doerfel three-dimensional presentation method, incorporating the Boerner average pitch distance between α_{ij} picture elements less than G*sin (0.017°) where G is the optimum distance between 2 and 4 times diagonal distance of the monitor, as applied to claim 19, discloses wherein the viewing area in which the viewer is located, includes at least a level, which

- are oriented in a forwards viewing direction (Doerfel: observation space located in front of the raster, paragraph 52), and

- are substantially parallel to the α_{ij} picture elements matrix (it is common that a viewing area is parallel to picture elements because viewer change the location to the left and right by maintaining the optimum viewing distance substantially) , and

- are located at a distance of about 2.5 to about 4 times the diagonal length of the matrix (well-known in the art that optimum distance is about 2 to 4 times the diagonal length of the matrix).

Regarding **claim 21,** The Doerfel three-dimensional presentation method, incorporating the Boerner average pitch distance between α_{ij} picture elements less

than G*sin (0.017°) where G is the optimum distance between 2 and 4 times diagonal distance of the monitor, as applied to claim 15, discloses wherein at least one α_{ij}

picture element displays partial information from at least two different Ak views (k=l... n) (Doerfel: Fig.6 shows two views A_7 and A_8) of the scene subject mixed partial information.

Regarding **claim 22,** the claimed invention is a device claim corresponding to the method claim 15. Therefore, it is rejected for the same reason as claim 15.

Regarding **claim 23,** the claimed invention is a device claim corresponding to the method claim 16. Therefore, it is rejected for the same reason as claim 16.

Regarding **claim 25,** the claimed invention is a device claim corresponding to the method claim 18. Therefore, it is rejected for the same reason as claim 18.

Regarding **claim 26,** the Doerfel three-dimensional presentation system, incorporating the Boerner average pitch distance between α_{ij} picture elements less

than G*sin (0.017°) where G is the optimum distance between 2 and 4 times diagonal distance of the monitor, as applied to claim 22, discloses in which the partial information of the first selection from the Ak views (k=l... n), is visually perceived by the viewer with one eye and the partial information of the second selections from the Ak views (k=l... n) is visually perceived with the other eye and the partial information corresponds to one or several Ak views (k=l... n), whereby the viewer perceives with each eye, substantially exclusively (Doerfel: predominantly, A1 to A4 for right eye, and A5 to A8 for left eye, paragraph 57) the partial information associated with the first and second selections.

Regarding **claim 27,** the claimed invention is a device claim corresponding to the method claim 20. Therefore, it is rejected for the same reason as claim 20.

Regarding **claim 28,** the claimed invention is a device claim corresponding to the method claim 21. Therefore, it is rejected for the same reason as claim 21.

3.   **Claims 17 and 24** are rejected under 35 U.S.C. 103(a) as being obvious over Doerfel in view of Boerner, and further in view of Relke (US 2006/0,103,932).

Regarding **claim 17**, the Doerfel three-dimensional presentation system, incorporating the Boerner average pitch distance between α_{ij} picture elements less than $G*\sin(0.017°)$ where G is the optimum distance between 2 and 4 times diagonal distance of the monitor, as applied to claim 22, discloses everything claimed except *in which the optical elements comprise a plurality of cylindrical lenses arranged in p columns and q rows.*

In the analogous filed of endeavor, Relke discloses Autostereoscopic Projection System. Relke specifically discloses that there are alternative ways to optical elements to display multi-view image which includes cylindrical lenses (paragraph 160) and wavelength filter (paragraph 164).

Therefore, given this teaching, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Doerfel and Boerner by substituting the wavelength filter with a plurality of cylindrical lenses arranged in p columns and q rows, as a selection from a finite set of implementation. The Doerfel three-dimensional presentation method, incorporating the Boerner average pitch distance between α_{ij}

picture elements less than G*sin (0.017°) where G is the optimum distance between 2

and 4 times diagonal distance of the monitor, further incorporating the Relke substituting

the wavelength filter with a plurality of cylindrical lenses arranged in p columns and q

rows, has all the features of claim 17.

Regarding **claim 24,** the claimed invention is a device claim corresponding to the

method claim 17. Therefore, it is rejected for the same reason as claim 17.

Conclusion

4.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

a.   Piepel (US 6,466,368) discloses Rear Projection Screen with Reduced

Speckle

b.   Miller (US 6,631,193) discloses Audio System Enhancement Using

Psycho Acoustic Matrix..

5.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to HEE-YONG KIM whose telephone number is (571)270-

3669. The examiner can normally be reached on Monday-Thursday, 8:00am-5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Marsha Banks-Harold can be reached on 571-272-7905. The fax phone

number for the organization where this application or proceeding is assigned is 571-

273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

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you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/HEE-YONG KIM/
Examiner, Art Unit 2621

/Andy S. Rao/
Primary Examiner, Art Unit 2621
June 17, 2010